REMARKS

Claims 1, 14 and 40 have been amended. Claims 1-26 and 37-40 are pending.

The following errors in the Office Action Summary are noted. There is no reference to the most recent amendment dated November 16, 2005. It is indicated that claims 1-37 are pending and that claims 27-36 are withdrawn, whereas in fact, claims 1-26 and 34-40 are now pending (claims 27-36 were cancelled in the last response and claims 38-40 were added).

It is further noted that the Office Action does not explicitly state that the claim rejections in the previous Office Action are withdrawn, as is usually done. It is assumed that this is the case, as the rejections are not re-iterated and new rejections are made.

It is respectfully requested that the next Office Action confirm the above status of the prosecution to this point.

In the Office Action, claim 1 is objected to as informal for its use of the phrase "operable to deconvolve said point spread function from said two or more two-dimensional image slices." The independent claims (including claim 1) have been amended to clarify that the point spread function is utilized in deconvolving the two or more two-dimensional image slices. It is respectfully submitted that this amendment is for clarity only as required by the Office and should not be seen as raising any new issues or as giving rise to any estoppel under current case law.

In the Office Action, claims 1, 7, 14-16 and 40 are rejected under 35 U.S.C. § 103(a) as being obvious in view of Iijima (US 5,445,714) and Avinash (US 5,561,611). Also, dependent claims 2-6, 8-13, 17-20, 23, 25 and 34-39 are rejected under 35 U.S.C. § 103(a) based on Iijima, Avinash, and various additional references. These rejections are respectfully traversed.

Claim 1 recites a system for three-dimensional imaging that includes the following elements:

a first image sensor operable to produce two or more two-dimensional image slices of a target;

a second image sensor operable to detect two or more second sensor images of the target;

means for multiframe blind deconvolution operable to determine a point spread function from said two or more second sensor images; and

means for deconvolution operable to deconvolve said two or more two-dimensional image slices using said point spread function and to produce two or more deblurred two-dimensional image slices.

Iijima shows a three-dimensional processing apparatus that captures respective series of "left" and "right" images of an object which are combined to form a three-dimensional image of the object. As noted in the Office Action, Iijima does not show any means for overcoming atmospheric turbulence, nor is Iijima seen to teach or suggest any way in which any such means could be incorporated into the three-dimensional processing system.

Avinash in the Background section states that "attempts have been made to develop procedures called blind deconvolution which do not require complete prior knowledge of the PSF [point spread function], and which attempt to simultaneously identify both the blurring function (the PSF) and the ideal unblurred image using the observed image data which are blurred and noisy. Beyond this general remark, Avinash is not seen to offer any specific teaching with respect to blind deconvolution. Specifically, Avinash is not seen to teach or suggest achieving blind deconvolution using respective sets of images from different sensors. Even more specifically, Avinash is not seen to teach or suggest achieving blind deconvolution using sets of images from left/right sensors such as are employed in Iijima.

It is respectfully submitted that the combination of Iijima and Avinash cannot render claim 1 obvious, because it does not teach or suggest means for deconvolution operable to deconvolve two or more two-dimensional image slices

using a point spread function and to produce two or more deblurred two-dimensional image slices, the two or more two-dimensional image slices being produced by a first image sensor, and the point spread function being determined by means for multiframe blind deconvolution from two or more second sensor images detected by a second image sensor, as all recited in claim 1.

Iijima teaches nothing at all with respect to the above-recited features of claim 1 with the exception of the images from its left/right sensors on which the "first" and "second" sensor images of claim one are presumably being read.

Avinash teaches nothing about performing blind deconvolution using sets of images from different sensors, whether left/right sensors such as in Iijima or any other plurality of sensors. Avinash is completely silent as to how any blind deconvolution is to be achieved, whether in a system such as that of Iijima or any other type of system.

Accordingly, even if Iijima and Avinash are taken together, there is no teaching of the entirety of the above-recited elements of claim 1 in which blind deconvolution is used to determine a point spread function based on one set of images from one sensor and then the point spread function is used to deconvolve another set of images from another sensor. Because at least these elements of claim 1 are entirely missing from the combination of Iijima and Avinash, claim 1 cannot be obvious in view of these references under 35 U.S.C. § 103(a).

The remaining claims incorporate, either directly or indirectly, the above-recited features of claim 1, and therefore all the claims of this application are seen to be non-obvious in view of Iijima and Avinash (and other references as applied in the Office Action). Because of the dispositive nature of the above distinctions, it is not seen to be necessary at this time to address the various assertions in the Office Action with respect to the rejections of the dependent claims on the basis of Iijima, Avinash and any of a variety of references. Applicant does not acquiesce to any of the views expressed in the Office Action

and specifically reserves the right to address any and all of these additional rejections at such time as it may be necessary to do so.

Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the undersigned Attorney at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-3661.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 616-2900, in Westborough, Massachusetts.

Respectfully submitted,

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